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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,654

05/05/2006

Bernadette Craster

57.0513 US PCT

8888

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7590

11/18/2008

SCHLUMBERGER-DOLL RESEARCH

ATTN: INTELLECTUAL PROPERTY LAW DEPARTMENT

P.O. BOX 425045

CAMBRIDGE, MA 02142

EXAMINER

HARCOURT, BRAD

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

11/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/542,654	<b>Applicant(s)</b> CRASTER ET AL.	
	<b>Examiner</b> Brad Harcourt	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-10, 13, 16-18, 20-22, 24-27, 29-33, 37, 40-52, 54-57, 59-61 and 63-77 is/are pending in the application.
- 4a) Of the above claim(s) 55 and 56 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30, 31, 40-45, 48, 49, 52, 57, 59-61, 63 and 65-77 is/are allowed.
- 6) ☒ Claim(s) 2-10, 13, 16-18, 20-22, 24-27, 29, 32, 33, 37, 46, 47, 50, 51, 54 and 64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The indicated allowability of claims 2 and 37 is withdrawn in view of the newly discovered reference(s) to Parent (US Patent No. 6,286,603). Rejections based on the newly cited reference(s) follow.

#### ***Claim Objections***

Claim 16 is objected to because it depends upon cancelled claim 12.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-8, 13, 16-18, 20, 21, 24-27, 32, 33, 37, 46, 47, 50, 51 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheymol et al. (US Patent No. 4,913,232) in view of Parent (US Patent No. 6,286,603).

Cheymol discloses a system for maintaining zonal isolation in a wellbore, characterized in that said system comprises, at specific locations Z1 and Z2 along said wellbore, sealing elements (rings) 2, said sealing element being able to deform both during and after placement and wherein the sealing element is maintained under compression after completion of the placement; sealing elements 2 are connected to a fluid communication element T designed to pressurize at least part 6, 18 of the sealing element 2; sealing elements 2 are confined in a volume surrounded by materials

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(formation P) of high Young's modulus (solid rock); sealing elements 2 comprise an elastomer sealing material that is an elastic solid; sealing elements 2 comprise a sealing material that is a settable liquid filler 11 pumped through tubing T; liquid filler 11 is "constituted by liquid elastomers such as fluorinated silicones, polysulfides, polythioethers and also epoxy" (col. 8, lines 22-24) that constitutes a yield stress fluid and withstand pressures "of several hundred bars" (col. 8, line 18).

Cheymol does not explicitly define the Young's modulus of the sealing element 2, but an elastomer material would have a Young's modulus between 100 to 1500 MPa. The system is designed for "separating at least two production zones in a well" (abstract) so necessarily seals 2 would be deformed and all sealing elements and materials would be in place for the lifetime of the well. The formations around the wellbore comprise permeable sections Z1 and Z2, and impermeable sections surrounding it (Fig. 6). Seal ring 2 is placed in a volume defined by casing P, tubing T and cement C. Cement C maintains upper seal 2 in compression.

Communication to the seals 2 can be "normally closed by a valve which responds to a certain pressure threshold" (col. 7, lines 6-8). Additionally, fluid communication can be "with an injector device being lowered inside the casing, other systems may also be used for the same purpose" (col. 7, lines 8-9) that constitutes a control line tube or a delivery line tube between the surface and sealing element.

In reference to claim 50, the limitation "well tube" is interpreted to mean a well tubing string independent of casing T.

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Cheymol, as described above, discloses all of the limitations of the above claims with the exception of having a cement sheath around seal members; seal members that are between 1 and 30 meters in length; and a fluid communication element adapted to supply pressurizing fluid after placement.

Cheymol discloses cement C above a seal member, and discloses that prior art discloses that "gap H extending axially between two zones was filled with cement in the annular space 5 between the rock wall of the well P and its casing T" (col. 4, lines 36-39). It would have been obvious to a person having ordinary skill in the art at the time of the invention to sheath a seal element with cement on both sides on the zonal isolation of Cheymol to provide a cheap permanent reinforcing seal. It also would have been obvious to a person having ordinary skill in the art at the time of the invention to have a seal member between 1 and 30 meters long as a seal shorter than that may not provide an effective seal and a seal longer than that would be overly expensive to produce.

Parent discloses a system for maintaining zonal isolation comprising seal elements 26 that deform to block a pathway in a well 24 and a fluid communication element 28 that supplies pressure that is "maintained constantly" (col. 4, line 40) after placement. It would have been obvious to a person having ordinary skill in the art at the time of the invention to include an element providing fluid pressure to a seal element after placement on the seal of Cheymol in view of Parent so that seal pressure can be selectively regulated while the seal is in place.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheymol et al. (US Patent No. 4,913,232) in view of Parent (US Patent No. 6,286,603) as applied to claim 2 above, and in further view of Eoff et al. (US Patent No. 6,187,839).

Cheymol and Parent disclose all of the limitations of the above claim with the exception of using a visco-plastic sealing material or a gelled sealing material. Eoff discloses "methods of sealing subterranean zones" (col. 2, lines 24-25) that includes "polypropylene glycol" (col. 3, line 65), which is a visco-plastic material, that polymerizes "thereby forming a sealing and plugging gel in the zone" (col. 6, lines 9-10). It would have been obvious to a person having ordinary skill in the art at the time of the invention to include a visco-plastic gel seal on the zonal isolation system of Cheymol in view of Parent and in further view of Eoff to create a high strength sealing body that can be pumped into an inflatable packer.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheymol et al. (US Patent No. 4,913,232) in view of Parent (US Patent No. 6,286,603) as applied to claim 2 above, and in further view of Willauer et al. (US Patent No 6,050,336).

Cheymol and Parent disclose all of the limitations of the above claim with the exception of including a visco-elastic seal member. Willauer discloses a plug using a visco-elastic material to seal off an area of a wellbore. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use a visco-elastic plug on the zonal isolation apparatus of Cheymol in view of Parent and in further view of Willauer to provide a seal apparatus that changes shape when exposed to high pressure.

Claims 22, 29 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheymol et al. (US Patent No. 4,913,232) in view of Parent (US Patent No. 6,286,603) as applied to claims 2 and 20 above, and in further view of Cronmiller (US Patent No. 4,339,000).

Cheymol and Parent disclose all of the limitations of the above claims with the exception of expanding cement and plugging a well for abandonment. Cronmiller discloses using a cement "capable of expanding during the curing thereof" (col. 5, lines 9-10) with a plug 16 intended to seal off an abandoned production zone (Fig. 3). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use expanding cement to plug a well on the isolation system of Cheymol in view of Parent and in further view of Cronmiller to ensure a tighter seal on a production zone that was no longer profitable.

#### ***Allowable Subject Matter***

Claims 30, 31, 40-45, 48, 49, 52, 57, 59-61, 63, and 65-77 are allowed.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 2-10, 13, 16-18, 20-22, 24-27, 29, 32, 33, 37, 46, 47, 50, 51, 54, 58 and 64 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Harcourt whose telephone number is (571)272-

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7303. The examiner can normally be reached on Monday through Friday from 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/  
Primary Examiner, Art Unit 3676

BH  
11/12/08